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13MCA352

CMRIT LIBRARY
BANGALORE - 560 037

Third Semester MCA Degree Examination, June/July 2018

Advanced Topics in DBMS

Time: 3 hrs.

Max. Marks: 100

Note: Answer any FIVE full questions.

- 1 a. Describe the structure of a magnetic disk with an example. (10 Marks)
b. What are the different delays while reading from the disk? (06 Marks)
c. Define file organization and clustered index. Show an example of clustered index. (04 Marks)
- 2 a. Discuss the different measures of transaction equivalence with examples. (10 Marks)
b. Describe the shadow paging technique for a single user system with example. (10 Marks)
- 3 a. What is B+ tree? Describe how search and insertion is performed in B+ tree. Discuss all uses. (14 Marks)
b. What are the differences between Indexed sequential? Access method (ISAM) and B+ Trees. (06 Marks)
- 4 a. What is extendible hashing? Explain the related terms-directory, local and global depth and the hash function. (09 Marks)
b. Describe insertion in Extendible Hash table. (11 Marks)
- 5 a. What is system catalog? What kind of information are stored in catalog? List all of them. (10 Marks)
b. Explain external merge sort algorithm with an example. Show all the passes. (10 Marks)
- 6 a. Explain three different techniques used to remove duplicates while performing projection operator. (12 Marks)
b. Show working of nested loop join and estimate its cost using an example. (08 Marks)
- 7 a. What is SQL block? Give an example of a how a complex query is broken down into query blocks. (06 Marks)
b. What is use of histograms in estimating result size of SQL query? (04 Marks)
c. Explain the types of histograms used for estimating result of SQL query with examples. (10 Marks)
- 8 a. Describe all the guidelines for index selection. (12 Marks)
b. Write short notes on multimedia databases and geographical information systems. (08 Marks)

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Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
2. Any revealing of identification, appeal to evaluator and /or equations written eg. 42+8 = 50, will be treated as malpractice.